

Application No.: 10/647,347

Docket No.: 2328-050A

REMARKS

Claims 26 and 31 have been canceled and replaced by new claims 32-41.

Claim 32 is directed to a method of manufacturing many different inductive plasma processes of the same type, wherein each of the processors includes a plasma excitation coil having plural electrically connected windings. The windings of the coil of each processor are adapted to be driven by an excitation source arrangement so that different currents simultaneously flow through a pair of excitation terminals of each winding. The plural windings of the coil in each processor are arranged so an exterior winding of the coil is about an interior winding of the coil, wherein both windings are about an axis of the coil. The different processors of the same type have differing electric field and plasma density distributions from processor to processor. The method includes, for each of the inductive plasma processes, moving the position of the exterior and interior windings relative to each other and the axis so the plasma density incident on a workpiece in a chamber of the processor has a predetermined desired relationship. The movement occurs until tests conducted on each processor indicate optimum uniform plasma distribution is achieved in each processor.

Claim 33 depends on claim 32, and requires the different processors of the same type to have differing azimuthal electric field distributions. The movement of the exterior and interior windings relative to each other includes turning the windings relative to each other and the axis until the tests indicate the different processors in the same type have the optimum uniform plasma distribution.

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Independent claim 36 is similar to previously submitted claim 26, but does not require the windings of the coil to be connected electrically in parallel, and defines exterior and interior windings in a manner similar to that set forth in claim 32. The exterior and interior windings of the coil are turned relative to each other to assist in controlling azimuthal electric field distribution and plasma density distribution. The turning occurs until tests indicate optimum uniform plasma distribution is achieved in each processor.

Independent claim 39 is similar to previously submitted claim 31, but does not require the windings of the coil to be connected electrically in parallel, and defines exterior and interior windings in a manner similar to that set forth in claim 32. The exterior and interior windings of the coil are moved relative to each other to assist in controlling electric field distribution and plasma density distribution. The moving occurs until tests indicate optimum uniform plasma distribution is achieved in each processor.

Claims 34, 37 and 40, respectively dependent on claims 33, 36 and 39, require the windings of the coil of each processor to be electrically connected in parallel. Claims 35, 38 and 41, respectively dependent on claims 32, 36 and 39, require the test to be conducted by simultaneously supplying electric current to the pair of excitation terminals of each winding of the coil of a particular processor.

The foregoing claims are clearly patentable over the art previously applied against claims 26 and 31.

With regard to the rejection of claims 26 and 31 under 35 USC 103(a) as being unpatentable over Holland et al., US patent 5,759,280 in view of Ni et al., US patent 6,229,264 and Savas, US patent 5,983,828, applicant notes that this rejection is moot.

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under 35 USC 103(c) because at the time the present invention was made the Ni et al. invention and the present invention were commonly owned.

The rejection of claims 26 and 31 under 35 USC 103(a) as being unpatentable over Holland et al., Yoshida et al. US patent 5,690,781 and Savas includes misstatements about the references and fails properly to consider aspects of the claims. These misstatements and failure properly to consider aspects of claims 26 and 31 are applicable to the claims presently submitted.

The allegation in the office action that Holland et al. discloses a coil having plural windings is incorrect. In fact, the Holland et al. coil includes a single winding having multiple turns or loops 42, 44, 46 and 48. Exterior turn 48 is rigid and fixed relative to interior turns 42, 44 and 46, as an inspection of Figure 2B reveals. Hence, exterior turn 48 is not susceptible to movement relative to any of interior turns or loops 42, 44 or 46. Because exterior turn 48 is rigid and fixed relative to the remainder of the coil, one of ordinary skill in the art would not have turned the exterior turn relative to the remainder of the coil.

While Yoshida et al. discloses a coil that is a movable, the entire coil is moved. There is no disclosure of moving one portion of the coil relative to another portion of the same coil. Since neither Holland et al. nor Yoshida et al. discloses a coil with interior and exterior windings that are movable relative to another, the allegation in the office action that it would have been obvious to one of ordinary skill in the art to modify the Holland et al. arrangement to include the claimed positioning step as result of Yoshida et al. is incorrect.

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The reliance on the Savas reference to meet the requirement of former claims 26 and 31 to perform the method on plural different processors until tests indicate optimum uniform plasma distribution is achieved in each processor is incorrect. The office action relies on Savas merely to disclose different processors that operate independently of each other. There is nothing in Savas to indicate that there is any adjustment, no less turning or moving of one winding relative to another, until tests indicate optimum uniform plasma distribution is achieved in each of plural processors.

Based on the foregoing, the previously mentioned limitations of claims 32, 36 and/or 39 are not rendered obvious by the combination of Holland et al., Yoshida et al. and Savas. Since claims 33-35, 37, 38, 40 and 41 depend on claims 32, 36 and 39, the dependent claims are allowable. In addition, there is no applied reference disclosing the requirement of claim 33 for the interior and exterior windings to be turned relative to each other and the axis until tests indicate the different processors of the same type have the optimum uniform plasma distribution.

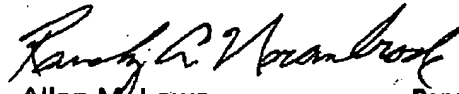
In view of the foregoing amendments and remarks, favorable reconsideration and allowance are respectfully requested and deemed in order.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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